

*Abstract*

A power controller for applying power to an induction motor or similar AC load has a variable drive circuit for starting and switching a portion of the AC input line power. In one mode, the input line power is fed straight through to the load. In another mode, the AC waveform is reshaped to improve the power factor or to boost its RMS value, e.g., for brownout protection. In a further mode the output power can be provided at a different frequency from the input line power. Vector control increases efficiency through power optimization, with sensing of load requirements. Sensing of regeneration pulses at the commencement of a half cycle can be employed for direct sensing of motor speed or load.